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WILLIAM GILSON FARLOW¹

THE Botanical Society of America records its appreciation of the great loss sustained by the society, by American science, and by botanical science throughout the world, in the death of Professor William Gilson Farlow.

Educated as a physician, he yielded readily to Asa Gray's suggestion that he broaden the scope of botany at Harvard University by developing there an interest in flowerless plants, which up to that time had scarcely appeared above the horizon of professional botanists in America. In preparation for this he traveled extensively in northern Europe, at a time when extended travel was uncommon, meeting and forming personal relations with the leading authorities on cryptogams; and he had the very unusual privilege of working in De Bary's laboratory at Strasbourg, where he associated intimately with other young men who were to continue the work of this great leader after his own untimely death.

Never overburdened by large numbers of half-interested students, Dr. Farlow communicated his own enthusiasm and industrious habits through long years to a limited number of men who have been counted for a generation among the leaders in American botany, and particularly in that branch of the science which De Bary's classical studies of fungous parasitism laid as the foundation on which the art of phytopathology has been reared of late, particularly in America, with much success and economic benefit.

Though familiar with ferns, and especially with the marine algæ of New England, of which he published an early monograph, Professor Farlow's interest always centered in the fungi, and the larger number of his publications have dealt with these plants.

He served his science particularly well in securing for permanent reference preservation the historic herbarium of Curtiss, one of the pioneers in American mycology, and that of Tuckerman, long the authority on American

lichens; and since the death of Asa Gray, in 1887, he has been recognized at home and abroad as the foremost of American botanists.

Among his unpublished manuscripts is the completion of a compendious Bibliographic Index of North American Fungi, one volume of which was printed in 1905, and of which the remainder should be brought to publication promptly now that his work on it is done.

A keen critic, an encouraging teacher, a kindly and sympathetic friend, and a man of the broadest international interest, Professor Farlow is mourned by all who knew him.

SCIENTIFIC EVENTS

RESEARCH ON RUBBER CULTIVATION

A CORRESPONDENT writes from Sumatra:

During the last week of August and the first week of September, 1919, Dr. J. J. van Hall, director of the Laboratory of Plant Diseases in Buitenzorg, Java, and Dr. R. D. Rands, botanist in the same laboratory; specially engaged on a study of the brown bast disease of the *Hevea* rubber, made a journey to Sumatra to study conditions there.

On September 2, 1919, a conference on brown bast disease was held at the A. V. R. O. S. (Algemeene-proefstation voor Rubber-Cultuur, Oost-kust van Sumatra) Proefstation. This was attended by Acting Director F. C. van Heurn, of the A. V. R. O. S. Mr. J. C. Maas, and Dr. H. Heuser, also of the A. V. R. O. S., Dr. J. J. van Hall and Dr. R. D. Rands, both of the Laboratory of Plant Disease, Mr. Carl D. La Rue and Mr. P. E. Keuchenius, botanist and mycologist respectively, of the Holland-American Plantations Company, and Dr. J. G. Fol, director of the experiment station of the Cultuur Maatschappij Amsterdam.

The cause of the disease was first discussed, Dr. Rands giving recent evidence secured by him pointing to a physiological origin. Mr. Carl D. La Rue stated that results obtained by Professor H. H. Bartlett and himself in 1918, and later by himself alone, indicated that the same bacterium was always present in bark affected with brown bark disease. Mr. Keuchenius stated that he also found bacteria to be constantly present in diseased tissue, and that he had secured positive results from inoculations with these bacteria.

Conditions favorable to attack by the disease were also discussed as well as methods of treat-

¹ Memorial adopted by the Botanical Society of America.

ment. All present agreed that the disease is the most serious one known to the rubber industry, that treatment alone was too expensive, and that methods of prevention should be discovered if possible.

Later at a special meeting an experiment was planned by Messrs. Rands, Maas, Keuchenius and La Rue to test more fully whether or not the disease may have a physiological cause. After visiting a number of rubber estates on the east coast of Sumatra and in Atjeh, Drs. van Hall and Rands returned to Java.

The first technical meeting of the personnel of the experiment stations for the rubber culture was held in Buitenzorg, Java, on November 1, 1919. Representatives of the Central Rubber Proefstation, the West-Java Proefstation, the Malang Proefstation, the Besoekei Proefstation, the Laboratorium voor Plantenziekten, and the research department of the Holland Plantations Company.

Among the subjects discussed were brown bast disease, mildew-diseases of leaves, borers, thinning out of trees on estates, and selection. The last topic is only now beginning to be a matter of concern to rubber planters, although experiment station workers have been interested in it for several years.

EXPERIMENT STATIONS OF THE BUREAU OF MINES

IN connection with the work of the Bureau of Mines, Department of the Interior, the bureau is now conducting eleven mining experiment stations, located in the various mining centers of the country, and bending their energies toward the special mining problems that are local to their part of the country. So great has been the demand for knowledge concerning the character of the work undertaken at these various mining stations and its general relation to the mining industry, the bureau has issued a bulletin describing the work of the stations. Dr. Van H. Manning, director of the bureau, sketches the work of the different stations as follows:

The station at Columbus, Ohio, situated at a clay-working center is employed mostly on ceramic problems. In this country there are about 4,000 firms manufacturing clay products, including brick, tile, sewer pipe, conduits, hollow blocks, architectural terra cotta, porcelain, earthenware, china and art pottery. The amount invested in these industries is approximately \$375,000,000 and the value of the products exceeds \$208,000,000 annually.

The station at Bartlesville, Okla., is investigating problems that arise in the proper utilization of oil and gas resources, such as elimination of waste of oil and natural gas, improvements in drilling and casing wells, prevention of water troubles at wells, and of waste in storing and refining petroleum, and the recovery of gasoline from natural gas.

What the Bureau of Mines has done for the great coal-mining industry, chiefly through investigations at the experiment station at Pittsburgh, Pa., has been published in numerous reports issued by the bureau. Some of the more important accomplishments have been the development and introduction of permissible explosives for use in gaseous mines, the training of thousands of coal miners in mine-rescue and first-aid work, and the conducting of combustion investigations, aimed at increased efficiency in the burning of coal and the effective utilization of our vast deposits of lignite and low-grade coal.

The Salt Lake City station has devised novel methods of treating certain low-grade and complex ores of lead and zinc. These methods show a large saving of metal over methods hitherto employed, and have made available ores that other methods could not treat profitably.

The Seattle station is busy with the beneficiation of the low-grade ores of the Northwest, and the mining and utilization of the coals of the Pacific states; the Tucson station is working on the beneficiation of low-grade copper ores; and the Berkeley station has shown how losses may be reduced at quicksilver plants and how methods at those plants can be improved.

In the conduct of these investigations the bureau seeks and is obtaining the cooperation of the mine operators. At more than a dozen mills in the west engineers from the stations are working directly with the mill men on various problems, and the results they already have obtained more than warrant the existence of the stations. Success in solving one problem may easily be worth millions to the country. Mining men are using these stations more and more freely as they realize that the government maintains these stations to help them, and that the difficulties of the operators, both large and small, will receive sympathetic consideration and such aid as the stations can give.

GRANTS FOR RESEARCH OF THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

At the St. Louis meeting of the association, the council assigned the sum of \$4,500 to be expended by the Committee on Grants for